

THE TUNG OIL TREE, ALEURITES FORDII

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INTRODUCTION:

The tung oil tree, also known as tung nut or tung tree, Aleurites fordii Hemsl. (fig. 1) is a native of China and has been cultivated there for around 4,000 years. It has been widely introduced and planted as an oil plant in warm temperate areas of the world, including north Florida.

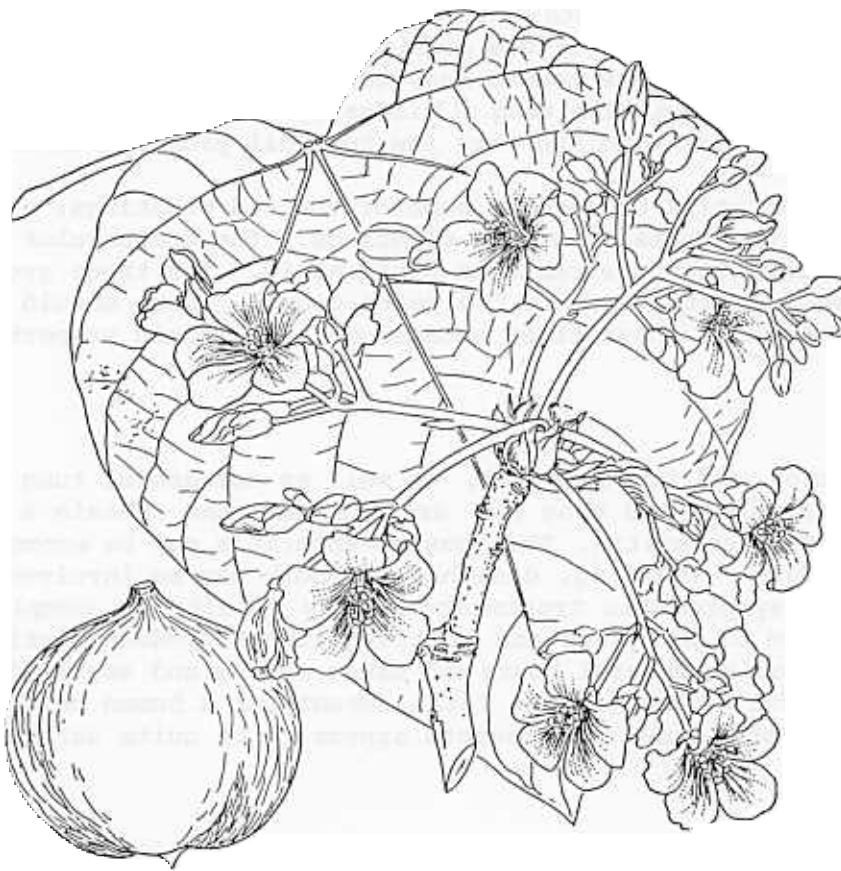


Fig. 1. Aleurites fordii (after West 1960)

DESCRIPTION:

Tung oil tree, Aleurites fordii: A small deciduous tree to 35 ft (11 meters) tall and wide with smooth bark, mucilaginous sap, and thick twigs. Leaves alternate, long-stalked, simple; blades 5-10 in. (13-25 cm) long, broadly ovate to subcordate, acute, and often with additional point each side of tip, margins entire, bases rounded to subcordate; petiole with two reddish or brownish

glands near blade. Flowers in large terminal clusters in spring usually before leaves. Flowers about 1 in. (25 mm) wide with 5-7 light pink or white petals marked with deep red or brownish red lengthwise lines and reddish brown bases, giving the overall appearance of a pink flower with a dark center. Each inflorescence with several pistillate and numerous staminate flowers in the same cluster. Fruits nearly globular, 2-3 in. (50-75 mm) wide, dark green, turning brown, on long drooping pedicels. Seeds 3-7, large, 1 in. (25 mm) long and nearly as wide, hard, brown to black, rough-coated, flesh white.

#### USES:

Tung oil trees were first planted in Florida at Tallahassee in 1906. Since that time around 40,000 acres have been planted for oil production from Gainesville north and west. Over 12 million pounds of tung oil annually have been produced in Florida in peak years. Tung oil has been considered one of the best drying oils available for use in paints and varnishes. However, during the past 10 to 20 years synthetic resins have to a considerable extent replaced tung oil. The resultant loss of market has caused many growers to abandon their plantings or to bulldoze out the trees. The tung oil industry has virtually ended in Florida with little or no production and very few tung oil products on the market.

Tung oil trees can still be seen in some of the old plantings, as seedlings in fence rows, or as ornamentals in yard plantings. The spectacular spring floral display makes tung trees desirable as ornamentals. The trees grow rapidly and commence flowering after only a few years growth. Care should be exercised, though, in the use of these trees because of their toxic properties.

#### TOXICITY:

The foliage, sap, and fruit (nuts), as well as commercial tung meal (residue after oil extraction) and tung oil are irritant and contain a toxic saponin which causes gastro-enteritis. This gastro-enteritis may be accompanied by mild to violent purging. Vomiting, diarrhea, or both may be involved. In mild to moderate cases, symptomatic treatment usually results in complete recovery. Chewing a portion of a kernel and spitting it out produces irritation of the mouth and lips lasting several hours and makes eating and swallowing quite difficult and painful. The minimum fatal amount for a human being has not been determined. Finished tung oil products appear to be quite safe when used properly.

#### SELECTED REFERENCES:

- Hadsel, D. W. 1959. Tung oil industry in Florida. Fla. Dept. Agric. Bull. 11. 34p.
- Watt, J. M., and M. G. Breyer-Brandwijk. 1962. The medicinal and poisonous plants of southern and eastern Africa. p. 395-397. E. & S. Livingstone. London. 1457p.
- West, E. 1960. Poisonous plants around the home. Agric. Ext. Serv. Bull. 175. 38p.